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United States Patent [19]

Gregory et al.

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[54] **METHOD FOR GENERATING A LOGIC CIRCUIT FROM A HARDWARE INDEPENDENT USER DESCRIPTION USING ASSIGNMENT CONDITIONS**

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Related U.S. Application Data

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[51] **Int. Cl.⁶** G06F 17/50

[52] **U.S. Cl.** 364/490

[58] **Field of Search** 395/800; 364/489, 364/490

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[57] **ABSTRACT**

A method and system are provided for generating a logic network using a hardware independent description means. A logic circuit synthesizer, in response to a user description specifying only signals and the circumstances under which the signals are produced, generates a logic network that generates the signals specified in the user description, e.g., a net list of logic elements, such as logic gates, high impedance drivers, level sensitive latches and edge sensitive flip-flops along with the interconnections of the logic elements. In one embodiment, the logic circuit synthesizer includes a preprocessor means and a logic circuit generator means. The preprocessor means, in response to the user description, converts signals and conditions in the user description into a structure having nodes interconnected by edges. The edges include an edge condition under which the edge is traversed. The logic circuit generator, using the structure and the edge conditions, creates a logic network that generates the signals specified in the user description.

14 Claims, 25 Drawing Sheets

Microfiche Appendix Included
(3 Microfiche, 205 Pages)

